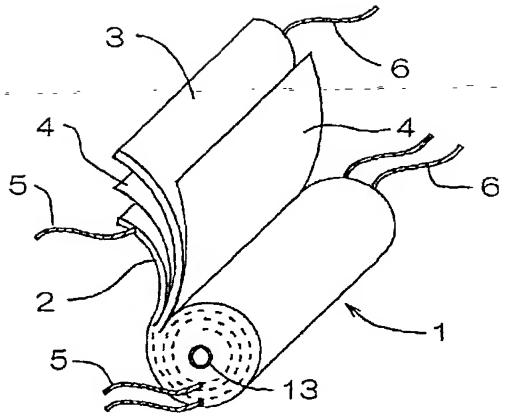
FIG.1



JC09 Rec'd PCT/PTO 14 DEC 2001

FIG.2

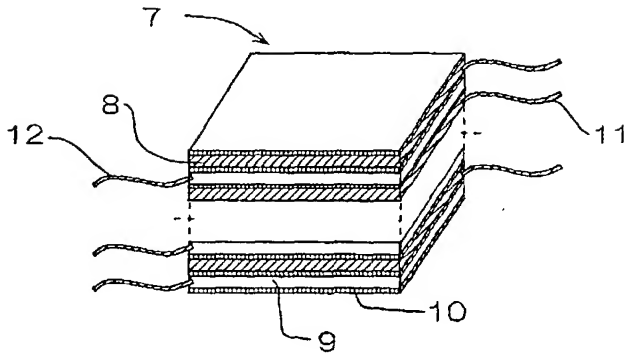


FIG.3

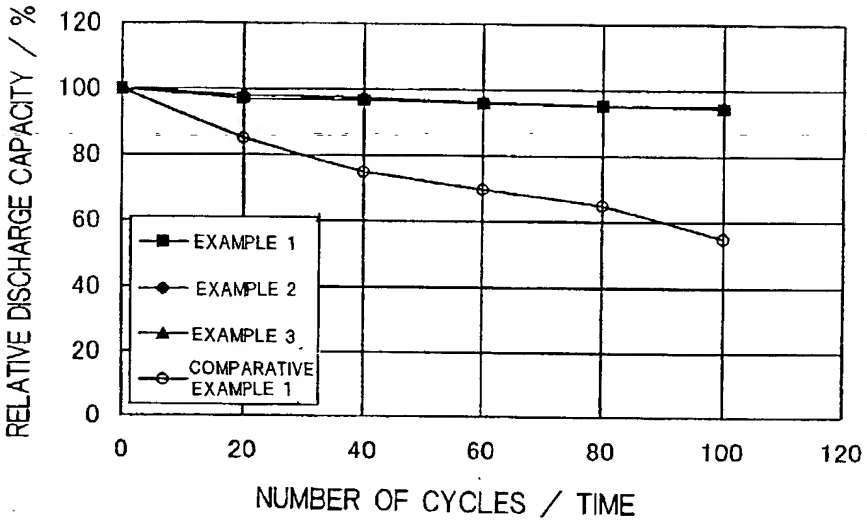


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FIG.4(a)

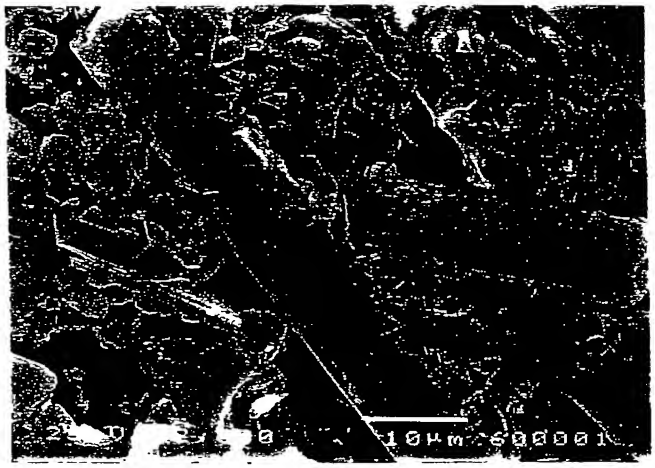


FIG.4(b)

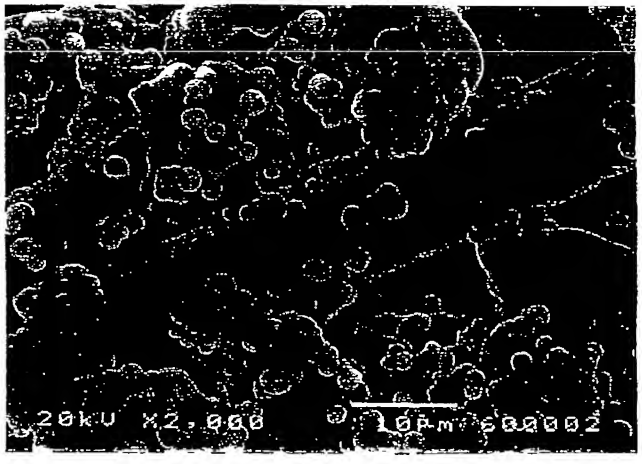


FIG.5

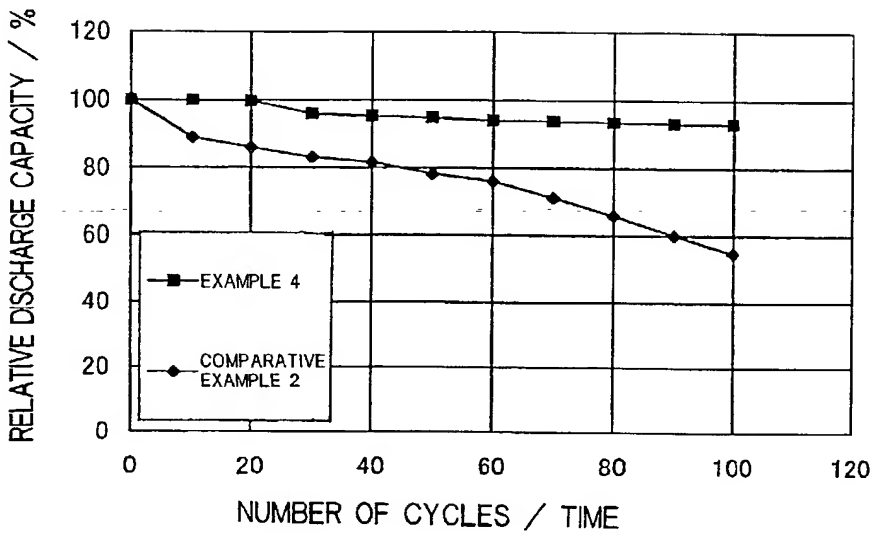

RELATIVE DISCHARGE CAPACITY / %
120
100
80
60
40
20
0
EXAMPLE 4
COMPARATIVE EXAMPLE 2
0
20
40
60
80
100
120
NUMBER OF CYCLES / TIME

FIG.6

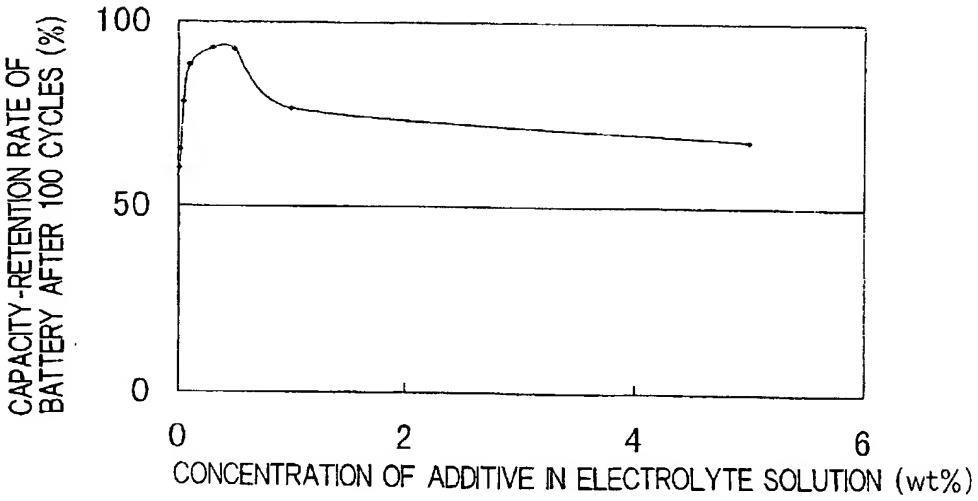

CAPACITY-RETENTION RATE OF BATTERY AFTER 100 CYCLES (%)
100
50
0
0
2
4
6
CONCENTRATION OF ADDITIVE IN ELECTROLYTE SOLUTION (wt%)

FIG.7

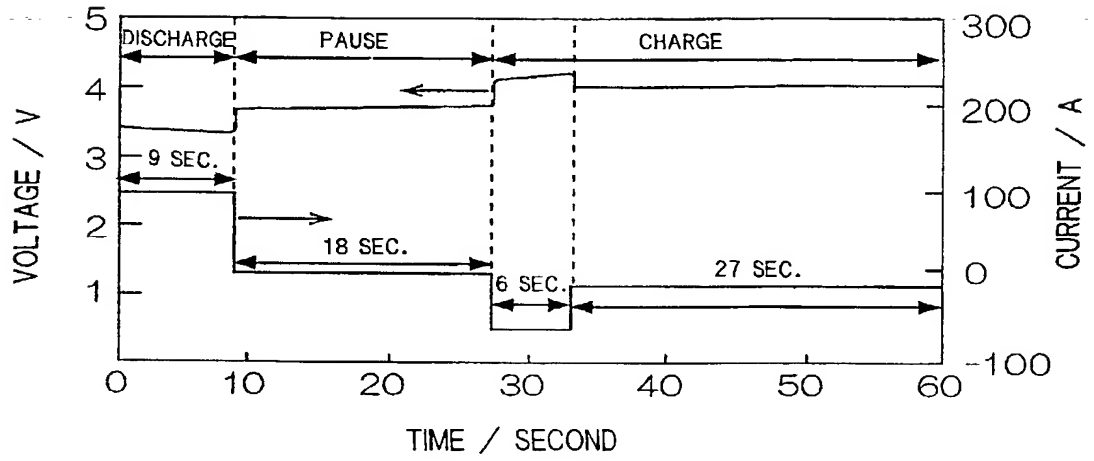

DISCHARGE
PAUSE
CHARGE
9 SEC.
18 SEC.
6 SEC.
27 SEC.
VOLTAGE / V
CURRENT / A
TIME / SECOND
5
4
3
2
1
300
200
100
0
-100
0
10
20
30
40
50
60

FIG.8

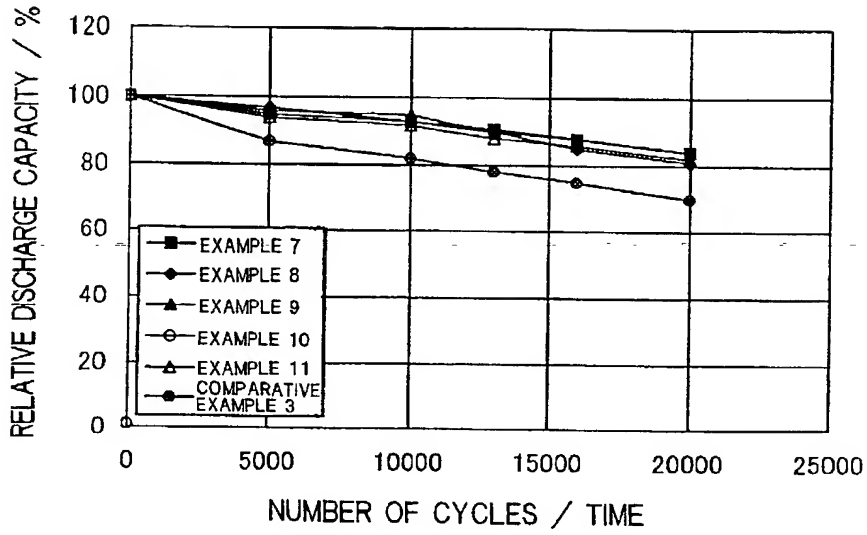

RELATIVE DISCHARGE CAPACITY / %
120
100
80
60
40
20
0
0
5000
10000
15000
20000
25000
NUMBER OF CYCLES / TIME
EXAMPLE 7
EXAMPLE 8
EXAMPLE 9
EXAMPLE 10
EXAMPLE 11
COMPARATIVE EXAMPLE 3

FIG.9

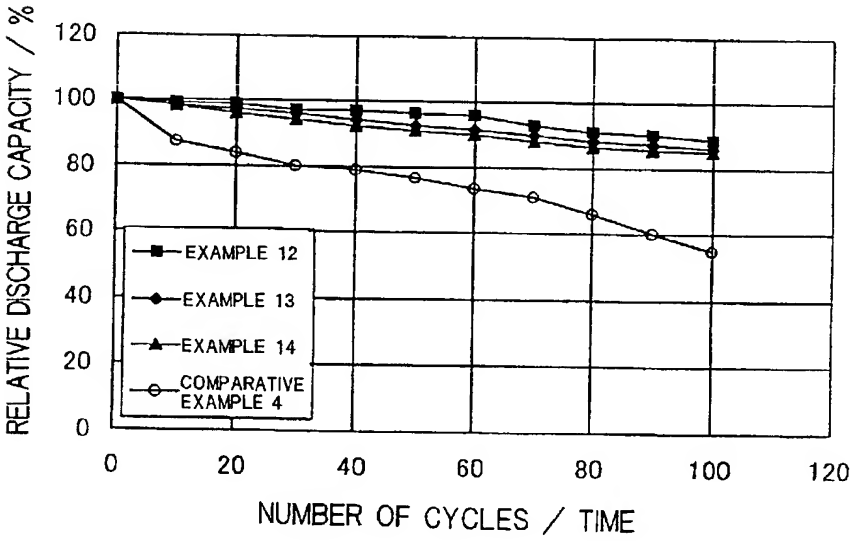

RELATIVE DISCHARGE CAPACITY / %
120
100
80
60
40
20
0
0
20
40
60
80
100
120
NUMBER OF CYCLES / TIME
EXAMPLE 12
EXAMPLE 13
EXAMPLE 14
COMPARATIVE EXAMPLE 4

FIG. 10

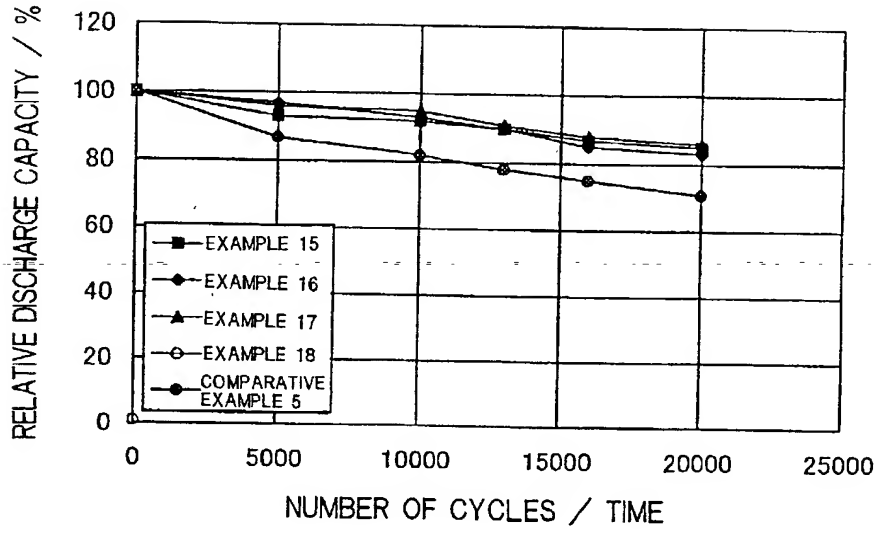

RELATIVE DISCHARGE CAPACITY / %
120
100
80
60
40
20
0
0
5000
10000
15000
20000
25000
NUMBER OF CYCLES / TIME
EXAMPLE 15
EXAMPLE 16
EXAMPLE 17
EXAMPLE 18
COMPARATIVE EXAMPLE 5

FIG. 11

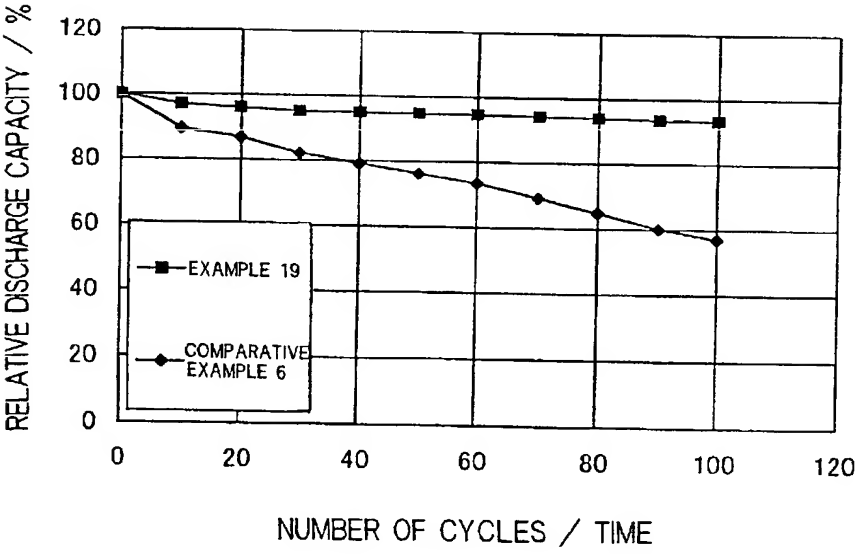

RELATIVE DISCHARGE CAPACITY / %
120
100
80
60
40
20
0
0
20
40
60
80
100
120
NUMBER OF CYCLES / TIME
EXAMPLE 19
COMPARATIVE EXAMPLE 6

FIG.12

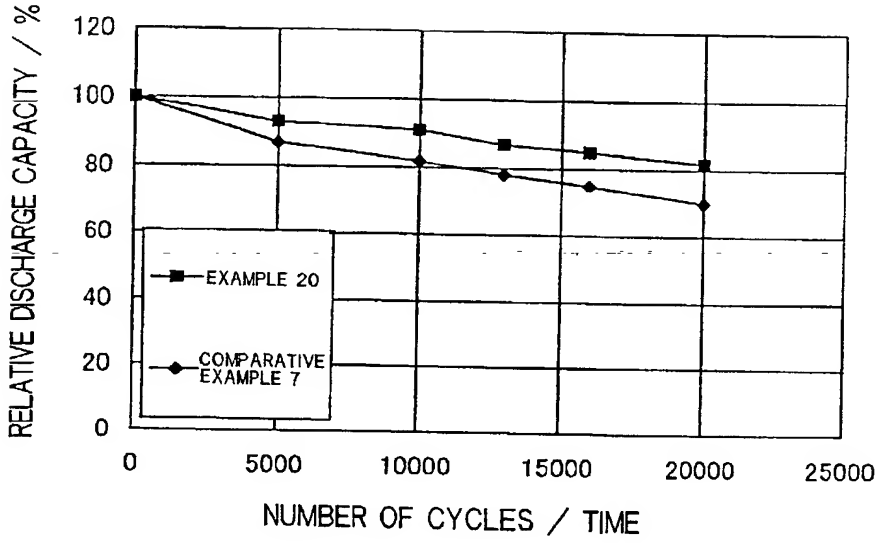

RELATIVE DISCHARGE CAPACITY / %
120
100
80
60
40
20
0
EXAMPLE 20
COMPARATIVE EXAMPLE 7
0
5000
10000
15000
20000
25000
NUMBER OF CYCLES / TIME

FIG.13

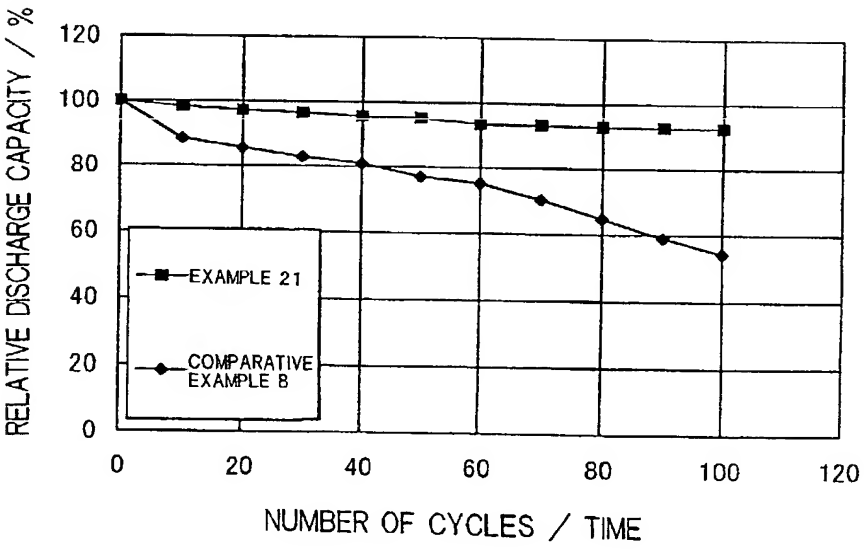

RELATIVE DISCHARGE CAPACITY / %
120
100
80
60
40
20
0
EXAMPLE 21
COMPARATIVE EXAMPLE 8
0
20
40
60
80
100
120
NUMBER OF CYCLES / TIME

FIG.14

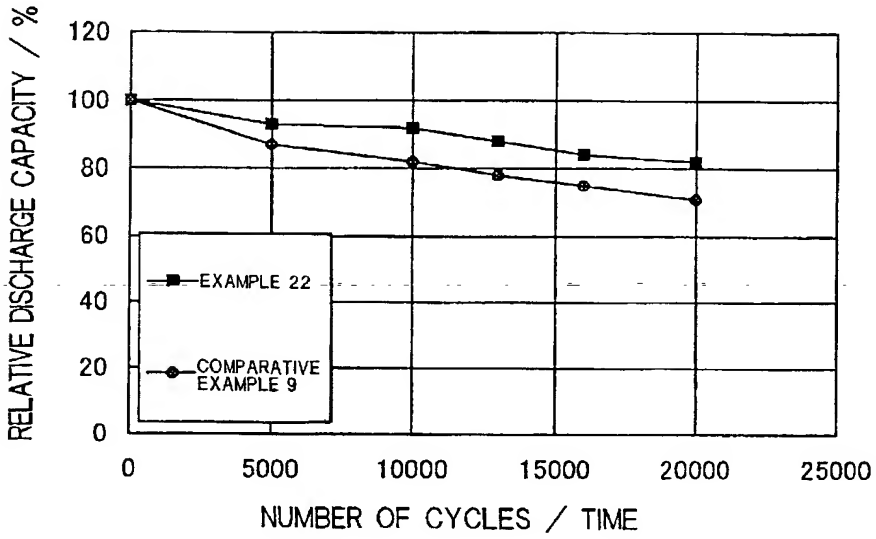

RELATIVE DISCHARGE CAPACITY / %
120
100
80
60
40
20
0
EXAMPLE 22
COMPARATIVE EXAMPLE 9
0
5000
10000
15000
20000
25000
NUMBER OF CYCLES / TIME

FIG.15

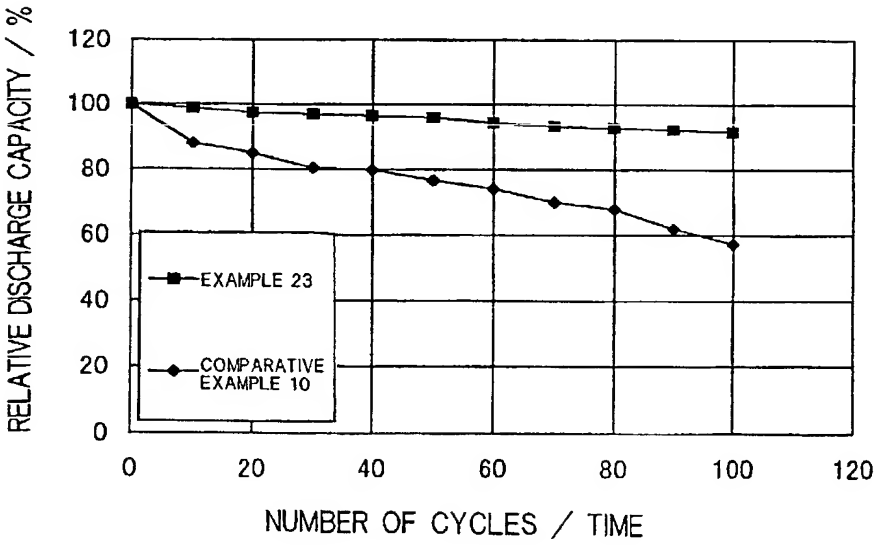

RELATIVE DISCHARGE CAPACITY / %
120
100
80
60
40
20
0
EXAMPLE 23
COMPARATIVE EXAMPLE 10
0
20
40
60
80
100
120
NUMBER OF CYCLES / TIME

FIG.16

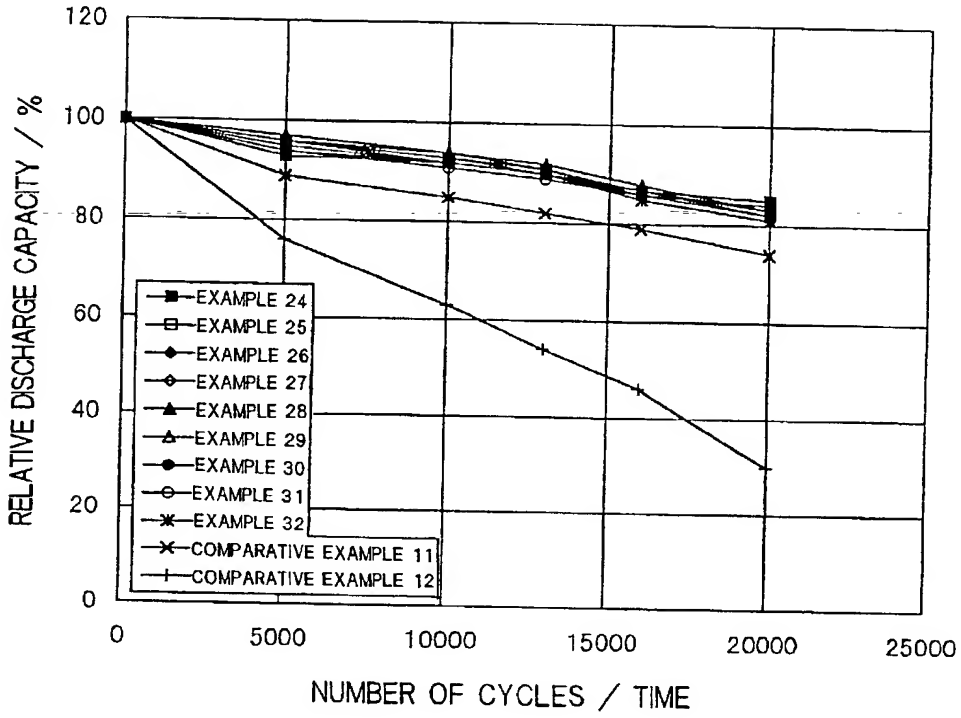
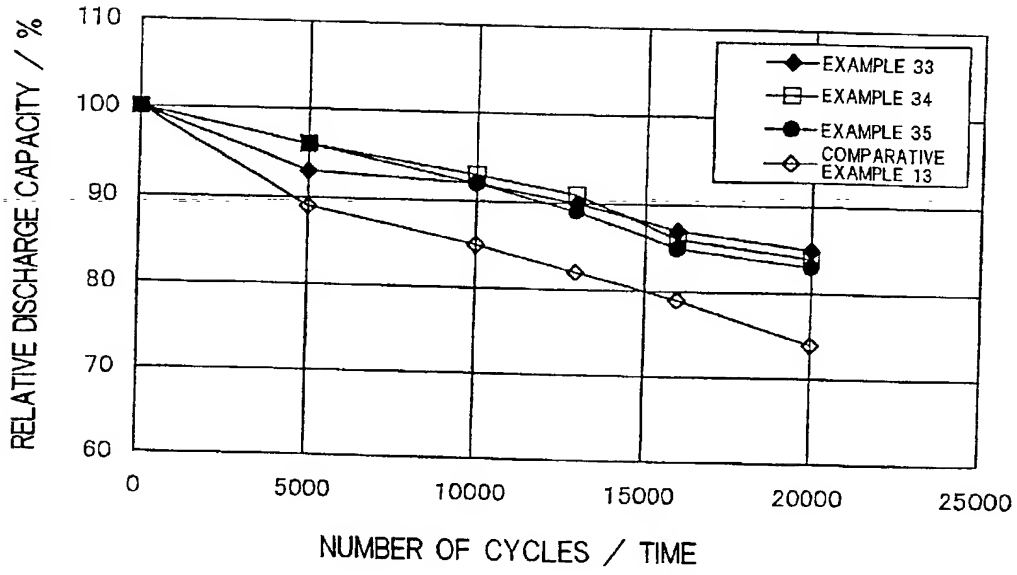

120
100
80
60
40
20
0
RELATIVE DISCHARGE CAPACITY / %
0
5000
10000
15000
20000
25000
NUMBER OF CYCLES / TIME
EXAMPLE 24
EXAMPLE 25
EXAMPLE 26
EXAMPLE 27
EXAMPLE 28
EXAMPLE 29
EXAMPLE 30
EXAMPLE 31
EXAMPLE 32
COMPARATIVE EXAMPLE 11
COMPARATIVE EXAMPLE 12

FIG.17


RELATIVE DISCHARGE CAPACITY / %
110
100
90
80
70
60
0
5000
10000
15000
20000
25000
NUMBER OF CYCLES / TIME
EXAMPLE 33
EXAMPLE 34
EXAMPLE 35
COMPARATIVE EXAMPLE 13